



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,121	07/11/2003	Todd E. Kooken	LEEE 200320	3001
64956	7590	10/10/2006		
FAY SHARPE / LINCOLN 1100 SUPERIOR AVENUE SEVENTH FLOOR CLEVELAND, OH 44114			EXAMINER WRIGHT, INGRID D	
			ART UNIT 2835	PAPER NUMBER

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/617,121

Applicant(s)

KOOKEN ET AL.

Examiner

Ingrid Wright

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 15-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10 and 15-17 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 & 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) (fig. 2) in view of Patel US 6163073, further in view of Getter US 4772102.

With respect to claim 1, AAPA teaches a heat dissipation platform for an output switch (Q1) of an inverter power source of an electric arc welder, said platform comprising a conductive plate (36) with first and second generally parallel surfaces (see, for example, locations marked on AAPA) and, said switch (Q1) being mounted on said first surface.

AAPA shows only one switch being mounted on said first surface of a heat sink.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to place an additional switch on the first surface, of the invention of AAPA, in order to provide enhanced thermal and heat exchange between a heat sink and switch assembly.

Additionally, it has been held that mere duplication of the essential working parts of the device involves only routine skill in the art *St. Regis Paper CO. v. Bemis CO.*, 193 USPQ 8.

Furthermore, reference to Getter, teaches a plurality of switches (54) mounted on a first surface of a heat sink (50).

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to use multiple switches as taught Getter on the first surface of the AAPA, in order to provide an improved inverter having power switches and a heat sink for switches which is in direct thermal conductive exchange to a heat sink in ambient air outside of the.

AAPA lacks a plurality of parallel heat pipes located between said surfaces and extending in a given direction.

Patel teaches (fig. 2) a plurality of parallel heat pipes in grooves (32,34,36,38 & 40), located between parallel surfaces of a platform and extending in a given direction, wherein said parallel heat pipes mounted in grooves (32,34,36,38 & 40) in said plate (bottom portion of heat sink (10)), wherein said parallel heat pipes in grooves (32,34,36,38,40) are mounted adjacent a surface (top surface of module (42)).

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to place the plurality of heat pipes as taught by Patel between the first and second generally parallel surfaces (see, for example, locations marked on AAPA) in the invention of the AAPA, in order to provide more efficient heat transfer (column 2, lines 22-25).

As to the switches mounted on said first surface and closely spaced from each other in said given direction, it would have been obvious to one having ordinary skill in the art at the time the invention was

made to extend the plurality of switches of Getter on the heat sink of the AAPA as modified by Patel, comprising the plurality of heat pipes, in the direction of the heat pipes or any appropriate direction, in order to enhance and improve the capabilities of the inverter of the AAPA.

With respect to claim 2, AAPA teaches a heat sink (30) of high heat conductivity material with a thin mounting plate (34) on said second surface and integral, parallel fins (38) protruding from said mounting plate (34) in a direction away from said second surface and extending in said given direction.

With respect to claims 3, AAPA teaches a fan (40) mounted on said platform to blow air toward said second surface (see, for example, location marked on AAPA).

With respect to claim 4, AAPA teaches a fan (40) mounted on said platform to blow air toward second surface.

With respect to claim 5, AAPA teaches a switch (Q1) mounted at a first location on said first surface and a first fan (40) blowing air toward said second surface at a said first location.

AAPA lacks a second fan blowing air toward said second surface at said second location.

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to add an additional fan of the AAPA to blow air toward said second surface at said second location, in order to improve heat transfer.

AAPA lacks an additional switch being mounted on said first surface of a heat sink.

Art Unit: 2835

It would have been obvious to one having ordinary skill in the art at the time the invention was made to place an additional switch on the first surface, of the invention of AAPA, in order to provide enhanced thermal and heat exchange between a heat sink and switch assembly.

Additionally, it has been held that mere duplication of the essential working parts of the device involves only routine skill in the art *St. Regis Paper CO. v. Bemis CO.*, 193 USPQ 8.

Furthermore, Getter teaches a plurality of switches (54) mounted on a first surface of a heat sink (50).

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to use multiple switches as taught by Getter on the first surface of the AAPA, in order to provide an improved inverter having power switches and a heat sink for switches which is in direct thermal conductive exchange to a heat sink in ambient air outside of the inverter (see, col. 2, lines 42-46 of Getter).

With respect to claims 6-10, AAPA teaches a heat dissipation platform, but lacks parallel heat pipes.

Patel teaches (fig. 2) a plurality of parallel heat pipes in grooves (32,34,36,38 & 40), located between parallel surfaces of a platform and extending in a given direction, wherein said parallel heat pipes mounted in grooves (32,34,36,38 & 40) in said plate (bottom portion of heat sink (10)), wherein said parallel heat pipes in grooves (32,34,36,38,40) are mounted adjacent a surface (top surface of module (42)).

Art Unit: 2835

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to place the plurality of heat pipes as taught by Patel between the first and second generally parallel surfaces (see, for example, locations marked on AAPA) in the invention of the AAPA, in order to provide more efficient heat transfer (column 2, lines 22-25).

With respect to claim 15, AAPA teaches wherein said plate (36) comprises a first portion and a second portion.

With respect to claim 16, AAPA teaches wherein said first portion includes said first surface and said second portion includes said second surface (see, for example, locations marked on AAPA).

With respect to claim 17, AAPA teaches a heat dissipation platform for one output switch (Q1) of an inverter power source of an electric arc welder, said platform comprising a conductive plate (36) having first and second surfaces (see, for example, locations marked on AAPA), a switch (Q1) being mounted on said first surface at a first location.

AAPA lacks an additional switch being mounted on said first surface of a heat sink.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to place an additional switch on the first surface, of the invention of AAPA, in order to provide enhanced thermal and heat exchange between a heat sink and switch assembly.

Additionally, it has been held that mere duplication of the essential working parts of the device involves only routine skill in the art *St. Regis Paper CO. v. Bemis CO.*, 193 USPQ 8.

Furthermore, Getter teaches a plurality of switches (54) mounted on a first surface of a heat sink (50).

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to use multiple switches as taught by Getter on the first surface of the AAPA, in order to provide an improved inverter having power switches and a heat sink for switches which is in direct thermal conductive exchange to a heat sink in ambient air outside of the inverter.

AAPA lacks a plurality of parallel heat pipes located between said surfaces and extending in a given direction.

Patel teaches (fig. 2) a plurality of parallel heat pipes in grooves (32,34,36,38 & 40), located between parallel surfaces of a platform and extending in a given direction, wherein said parallel heat pipes mounted in grooves (32,34,36,38 & 40) in said plate (bottom portion of heat sink (10)), wherein said parallel heat pipes in grooves (32,34,36,38,40) are mounted adjacent a surface (top surface of module (42)).

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to place the plurality of heat pipes as taught by Patel between the first and second generally parallel surfaces (see, for example, locations marked on AAPA) in the invention of the AAPA, in order to provide more efficient heat transfer (column 2, lines 22-25).

As to the switches mounted on said first surface and closely spaced from each other in said given direction, it would have been obvious to one having ordinary skill in the art at the time the invention was made to extend the plurality of switches of Getter on the heat sink of the AAPA as modified by Patel, comprising the plurality of heat pipes, in the direction of the heat pipes or any appropriate direction, in order to enhance and improve the capabilities of the inverter of the AAPA.

Response to Arguments

3. Applicant's arguments filed 7/17/06, have been fully considered, but are not persuasive.

With respect to Applicant's arguments, regarding not mentioning the spacing of switches in the same direction in which the heat pipes are extended, the Examiner notes the AAPA teaches a switch (Q1), but lacks an additional switch on the heat sink and a plurality of heat pipes. Patel is relied upon to teach a heat sink with a plurality of heat pipes in grooves (32,34,36,38 & 40). Getter is relied upon to teach a plurality of switches (54) mounted on a heat sink (50). It would have been obvious to one of ordinary skill, to place the plurality of switches of Getter on the heat sink of the AAPA as modified by Patel, in the direction that the heat pipes are extended or in any other appropriate direction, in order to improve the capabilities of the inverter of the AAPA.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action


is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ingrid Wright whose telephone number is (571) 272-8392. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2800, ext 35. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

IDW


LYNN FEILD
SUPERVISORY PATENT EXAMINER